

## Chapter 6

# Movement and Positioning Considerations

The movement and positioning of FA battalions on today's fluid, crowded battlefield is a complicated process involving terrain management, selection of positions, movement planning and control, and the coordination of survey support for firing and TA operations. Clearance, coordination, and synchronization are operative terms that are critical to the successful conduct of FA movement and positioning. FA units are competing for battle space with all other elements, and the increased use of dispersed, scoot-and-shoot tactics by newer FA weapon systems creates a significant challenge for the FA battalion commander. This chapter provides the FA commander and staff with information to aid in planning the displacement and movement of the FA battalion. It has five major sections: Section I addresses terrain management, Section II focuses on positioning, Section III covers movement, Section IV discusses survey, and Section V provides a brief overview on deployment.

### SECTION I – TERRAIN MANAGEMENT

6-01. Terrain management is primarily the responsibility of the unit that controls the ground in a particular area or sector. This is usually an Army maneuver unit, however, especially during stability operations and support operations, the controlling agency could be a host nation government or military force, or a UN-affiliated military force or civilian relief organization.

6-02. FA battalions are integrally involved in the terrain management process as the positions and routes that the FA requires to accomplish its mission must be carefully planned and coordinated with all the units who control or use the required terrain. Terrain management involves the planning and coordination of positions and movements for units and individual elements or teams that are part of, or in support of, a FA battalion. Terrain management coordination is primarily the responsibility of the S3, however the, S2, S4, S6, and, where applicable, FSOs all play a role in the planning and coordination of positions and movements. Because a maneuver unit usually controls the required terrain, FSEs play a critical role in terrain management for all FA assets that must operate within a particular maneuver unit's zone.

6-03. The S2 provides valuable advice on the terrain, road and weather conditions, security and threat considerations (military and civilian), obstacles, and any intelligence information related to positioning and movement. The S2 also frequently assists the S3 with coordination of MP

support for moves, for reconnaissance of routes or PAs, and for acquiring maps or photographs of areas.

6-04. The FSEs with the maneuver units are responsible for assisting the maneuver S3 and the FA S3s in the coordination of positions and routes for FA units. The FSO is in the best position to monitor the current locations of all friendly units while simultaneously understanding FA requirements. Frequently, the brigade FSO will be working on behalf of and in conjunction with the FSCoord/DS FA battalion commander. In addition to coordinating terrain management issues for supporting DS and R FA battalions, the brigade FSO may be involved in coordinating with division or corps FSEs or FA HQs for battle space for division and corps GS units operating within or moving through the brigade zone.

6-05. Corps and divisional GS/GSR units frequently coordinate terrain management through DIVARTY or Corps Arty. Occasionally, the higher level coordination will consist of general area coordination. The FA battalion will then conduct direct coordination with the lowest level maneuver unit to obtain the specific locations or routes needed for the battalion. Usually the brigade FSE is the best element with which to coordinate.

## POSITION COORDINATION

6-06. Terrain management for a FA battalion involves the selection and coordination of numerous types of positions. The type of FA unit or element and the type of position required will have various implications for terrain management for PAs. (A PA is a general planning area within which a unit or element will position and operate, based on METT-TC and the actual terrain within the area. The boundaries of a PA describe the area within which a commander can select an appropriate position or positions. The size of a PA is dependent on METT-TC, especially the mission, type of unit and weapon system, echelon, and tactics. A battalion PA may contain smaller PAs for the HQ, trains, and subordinate units. A unit may designate separate smaller PAs for planning primary, supplementary, and alternate positions, or a single larger PA that allows for the siting of more than one of these position types within the limits of the PA.) While CP positions, hide locations, or assembly areas usually may be placed near other friendly units, weapon firing areas or radar operating positions should generally not be positioned close to other elements (e.g., BSAs, CPs, critical logistics or communications sites, populated areas) without appropriate consideration for the risks. As much as possible, S3s and FSEs should coordinate the use of PAs large enough to allow some flexibility in the final placement of the unit or element. Designation of too small an area may not provide enough terrain for the unit to properly site or camouflage all of its elements. Platoon or battery firing areas must be large enough to allow proper dispersion, and in the case of MLRS or Paladin, to allow for the selection of multiple firing points within the area.

6-07. Some weapon systems have special considerations. As an example, the danger area around an MLRS launcher, due to blast and flying debris during a launch, is 300m to the front and 400m to the rear of the launcher. FSOs must ensure that all unit commanders understand the risks and stay clear of

FA weapon systems. FA battery and platoon commanders must also understand terrain management priorities and allocations to avoid endangering or disrupting friendly units. The maneuver commander may designate specific sections of terrain as “No-Go” areas for FA weapon firing positions. This may be used more frequently for MLRS due to the larger firing signature and danger area.

6-08. When CP or trains positions must be placed near other similar elements (such as the BSA), consideration should be given to consolidating elements or, as a minimum, consolidating defensive plans. Both vehicular and electronic traffic should be considered in the planning and coordination of positions.

6-09. Terrain management is a three-dimensional process as firing locations must be coordinated with air corridors and other three-dimensional control measures. FSEs play a key role during planning by obtaining as much information as possible as early as possible from Army aviation and Air Force elements. Current and future operations must be considered as certain control measures, such as air corridors, may not go into effect until later in an operation.

6-10. FA battalion S3s should try to identify their PA requirements as early as possible so that FSEs can work with the maneuver units to prioritize and allocate battlespace early in the planning sequence. Alternate and supplementary position requirements must be considered and continuous coordination and communication is necessary. Alternate and supplementary positions are especially vulnerable to occupation by other Army units or even displaced civilians.

6-11. Frequently, coordination may also be required with local civilian governments. This coordination may be accomplished by the maneuver S3 as part of overall terrain coordination for the combined arms force, or the responsibility may fall to the FA battalion after general position requests have been approved by the maneuver S3.

## **MOVEMENT COORDINATION**

6-12. FA battalions may move individually or as part of a larger force such as a maneuver brigade or a FA brigade. The movements may consist of administrative or tactical road marches, combined arms team movements or combat formations, or the short tactical displacement of elements.

6-13. Terrain management issues concerning FA movements include more than just ensuring that FA movements are synchronized with the battle plan. Since many Army units compete for limited routes, FA movements must be coordinated and synchronized as part of the overall force movement plan. Frequently a FA battalion will require several routes for movement of all battalion elements. Often, the time allocated for a FA unit to transit a given route or routes will determine the type of movement technique used, the speed traveled, and the number of rest stops. Careful coordination with the maneuver unit responsible for the routes is necessary to ensure that FA units are adequately prioritized and included in overall movement plans. Positions for assembly areas or rest/refuel stops may be necessary.

6-14. When the FA battalion moves as part of a larger force, the FA S3 must understand all larger unit TSOP issues, control measures, movement techniques, and the expected reactions to ground or air attack. In a combined arms force move, elements of the FA battalion may need to be dispersed throughout the larger force to allow adequate artillery support.

6-15. As with PAs, close coordination between FA battalion S3s and FSEs is critical to terrain management for moves. Conflicts that arise may be forwarded through maneuver channels as well as FA channels. FSEs usually try to monitor other unit movements to ensure they do not interfere with the FA movement plan. The FA battalion S4 is also in a good position to learn about the movement of other CSS elements and should pass on information to the S3 as appropriate.

## **SECTION II – POSITIONING**

6-16. A FA battalion requires a wide variety of position locations in the accomplishment of its mission. The methods and techniques of organizing and positioning the elements of a FA battalion are usually situationally dependent. However, several standard positioning principles must be considered. Reconnaissance is also very important to the positioning and movement of the FA battalion. This section addresses position selection considerations, types of positions, and reconnaissance.

### **POSITION AREA SELECTION CONSIDERATIONS**

6-17. Several factors influence the S3's decision on where and how to organize and position the firing batteries, trains and CPs. The specific details of many of these factors will be identified during MDMP and IPB development. Some of the factors the FA staff should consider in PA selection are:

- Mission.
- The tactical situation.
- Force mix and weapon capabilities and limitations (to include attached/R/GSR FA).
- Logistical considerations.
- Impact of ammunition constraints (types, quantities, achievable ranges).
- Survivability.
- Future operations.
- The zone of the supported unit.
- Communications.
- Enemy capabilities.
- Weather and terrain.

6-18. Firing units should be positioned laterally and in depth. This increases their survivability and their flexibility in responding to calls for fire across the zone of action of the supported unit. The S3 must also consider minimum and maximum range implications (weapons and ammunition) and requirements to mass fires. In static or offensive operations, where the FLOT is moving forward, the S3 generally wants to position firing elements so the majority of the range fan (such as 2/3's) is forward of the FLOT or forward edge of the battle area (FEBA). In retrogrades, or other operations where the FLOT is moving or may move rearward, the S3 may position firing units further behind the FLOT or FEBA. In all cases, the mission, METT-TC, and location of critical targets will be the primary considerations for positioning firing elements.

### **TYPES OF POSITION AREAS**

6-19. The following list describes the types of positions that may be used by a FA battalion. CP locations are discussed in more detail in Chapter 2. CSS positions are discussed in Chapter 7. Positioning considerations for radar are

covered in Chapter 5. Radio retrans sites are discussed in Chapter 3. Battery level positions are discussed in detail in FM 6-50, FM 6-60, and FM 6-70.

- Hide/firing positions/areas for cannon, rocket, and missile systems.
- Battery/platoon, battery operations center (BOC)/POC locations.
- CP locations: main CP, ALOC, BSOC, JTOC.
- Logistics locations: UMCP, refuel/rearm points, ammunition points.
- Assembly areas.
- Radar section or met section positions.
- Radio retrans sites.
- Primary, alternate, supplementary positions.
  - A **primary position** is one from which a unit will accomplish its assigned tactical mission.
  - An **alternate position** is one to which a unit moves if the primary position becomes untenable or unsuitable for accomplishing the mission. The alternate position must allow the unit to perform the same mission assigned to it in the primary position.
  - A **supplementary position** is one to which a unit moves to perform a specific mission. As an example, a firing battery may be instructed to use a supplementary position to fire a SCATMINE or smoke mission.
- Current and planned/successive positions.

6-20. Locations such as CPs and logistics positions may be established separately or may be located with each other, with other FA elements, or with non-FA elements. For example, a DS FA battalion CP may be co-located with the supported maneuver brigade CP; or the battalion trains may be co-located with the brigade trains. A DS and R FA battalion may consolidate UMCPs.

## ASSEMBLY AREAS

6-21. A FA battalion may occupy an assembly area as an individual entity or as part of a larger force. DS and R units may occasionally occupy an assembly area as part of a combined arms force. GS and GSR units may be part of a FA brigade assembly area. There are two basic methods for organizing assembly areas:

- As a single assembly area divided into sub-sections.
- As separate, dispersed assembly areas for sub-elements or groups of sub-elements.

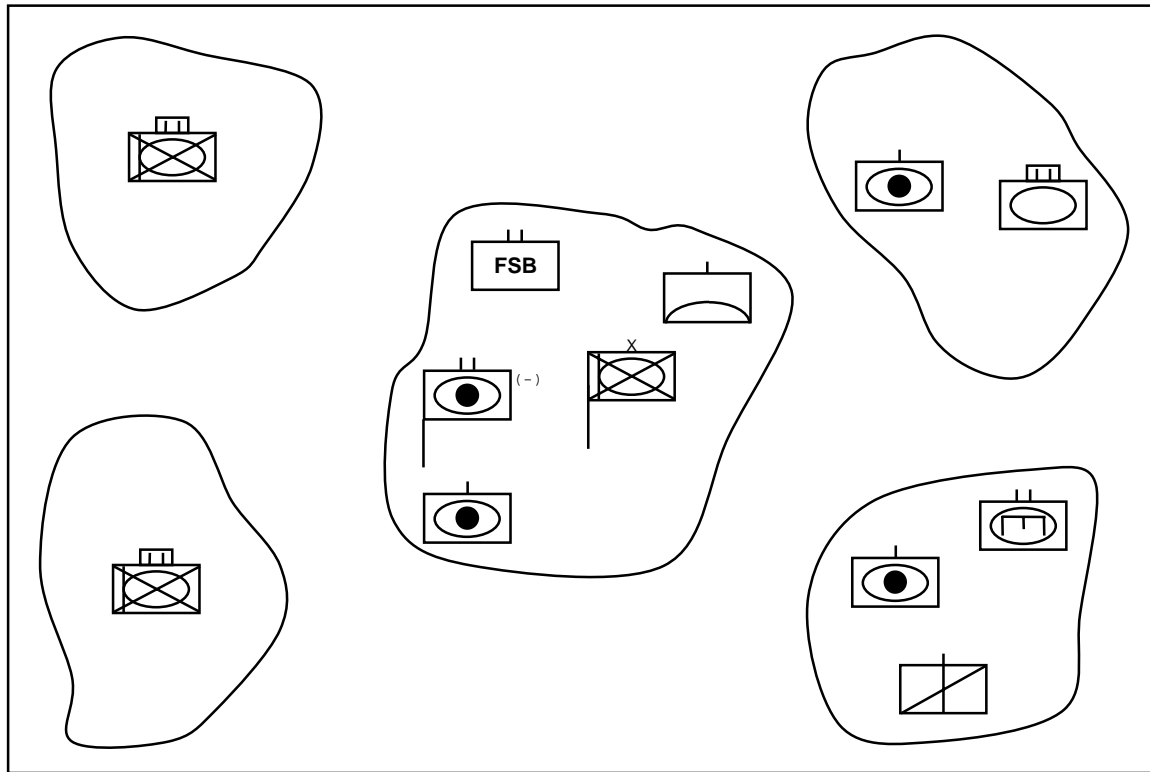
6-22. These methods are discussed below. While these paragraphs address combined arms assembly areas, the two techniques can also be used for establishing FA only assembly areas. GS and GSR FA battalions may sometimes occupy FA brigade assembly areas established on similar techniques. Additional information on maneuver brigade assembly areas can be found in FM 71-3, *The Armored and Mechanized Infantry Brigade*.

### A Sectioned Assembly Area

6-23. In this method the force (in this case a maneuver brigade) divides the assembly area into subordinate areas of responsibility, with subordinate battalions around the perimeter. C2, CS, and CSS units and elements are



electronic surveillance or patrols. Brigade C2 and the bulk of the CSS elements would occupy positions central to the outlying subordinate element areas.



**Figure 6-2. Example of a FA Battalion in Dispersed Assembly Areas**

6-27. In a combined arms assembly area group, a FA battalion may disperse all of its firing batteries among the outer positions. The bulk of the battalion C2 and CSS would be located in the central position. This method increases overall survivability from air attack and provides better mutual support. However logistics is more complicated as CSS elements would have to traverse the unsecured ground between locations. Also, the firing batteries are more exposed to ground attacks on the maneuver battalion positions.

6-28. Another option is to locate the entire battalion within the central assembly area. This improves C2 and logistics but increases vulnerability to air or ground attack on the central position. It is also more difficult for the battalion to provide close in fires to the central location in case of attack and for the batteries to provide mutually supporting fires to each other.

6-29. A variation of both techniques can be used whereby the bulk of the battalion C2 and CSS is placed in the center and one or two firing batteries are dispersed to subunit assembly areas farthest from the expected enemy locations. At least one firing battery is positioned in the center location.

6-30. In a FA brigade situation, the FA battalion most likely would have its own assembly area as part of the FA brigade assembly area group.



## OCCUPATION OF BUILT-UP AREAS

6-31. When a FA battalion has the option of positioning within or outside of a built-up area, the S3 should consider the following advantages and disadvantages in making his decision.

### ADVANTAGES

6-32. The enemy's TA capabilities are significantly degraded because of the effects of terrain masking on observation. The inherent heat and noise signatures of the cities distort sound ranging and IR detection systems. The inherent FM emissions make radio direction finding (RDF) difficult. Conventional photographic reconnaissance is more difficult because there is a greater demand on image interpretation with the clutter of an urban landscape. It is easier to hide in an environment where the unit equipment is less out of place than in a rural and more natural environment.

### DISADVANTAGES

6-33. Some of the disadvantages of occupying built-up areas include:

- Urban areas are often on likely avenues of approach. To enhance survivability, FA normally avoids positioning along likely enemy avenues of approach. In urban combat, this may often not be possible because every road or alley is a possible avenue of approach. A battalion should use available obstacles, such as overturned vehicles and demolished structures, to delay an enemy force. The S3 must coordinate all obstacles with the supported maneuver force.
- Any unit deployed in urban terrain is vulnerable to human intelligence (HUMINT) and sabotage activities, especially by civilians and special forces.
- Survey is more difficult. Reduced line-of-sight and magnetic interference (metallic and power line interference) can interfere with conventional survey. Line-of-sight problems can interfere with laying in howitzers. Firing elements may use hasty survey technique more often. See FM 6-50 for hasty survey techniques.
- Communications with higher and supported units by FM radio is significantly degraded because of line-of-sight problems. Careful siting of antennas and retrans stations may be required to overcome the problem. Units may rely more on wire usage.
- FA firing units may find themselves surrounded by enemy forces as the result of the nonlinear nature of urban combat. The firing unit must be prepared to defend itself against enemy assault while performing its primary role of delivering FS. Depending on availability, a maneuver squad or platoon not committed elsewhere may be required to provide local security for a firing unit. However, it is likely that an FA battery must be prepared to prevent a breach in the line by defending its own position against enemy ground assault. This means that firing batteries must be trained and equipped to build barricades, prepare demolitions, lay minefields, and prepare Claymores and booby traps.
- Positioning FA units near urban structures may create site-to-crest problems. The height of some of the buildings along the gun-target line

directly in front of the battery position may have to be reduced to avoid the use of high-angle fires. Engineer support should be sought to ensure rubble doesn't hinder friendly movement. The S3 should ensure firing elements report site-to-crest problems so that he can anticipate the impacts and plan appropriate adjustments to fires. If several weapons are masked, the S3 may need to plan on increased volleys from available shooters and/or increased support from other FA assets.

- Lay and occupation times increase as a result of movement, construction, spade emplacement, and reduced line-of-sight. Units may need multiple aiming circles to lay a firing element. Also, the use of other lay techniques, such as referring between pieces, will be difficult because howitzers may not be able to see each other. Newer weapon systems with internal positioning systems are not as affected by this.
- Displacement may be difficult because of the rubbing effect and the width of roads in the urban area. In addition to site-to-crest problems, individual sections may have difficulty traversing and elevating weapons because of interference of buildings.

## RECONNAISSANCE

6-34. Units conduct reconnaissance to identify the best battalion and firing unit positions, march routes, start and release points (SPs/RPs), CPs, OPs, and communications sites. This includes a thorough analysis of the terrain. Reconnaissance helps the unit move from one location to another as quickly and in as organized a manner as possible. At times, the reconnaissance effort may be part of a larger reconnaissance effort and will need to be coordinated.

## PLANNING AND COORDINATION

6-35. Based on the tactical situation and METT-TC, the commander and the S3 will determine if reconnaissance is possible and if so, the type of reconnaissance and composition of the party. Normally, the S3, S6, and battery commanders, when available, form the reconnaissance party. In some cases, the S2 may go with the reconnaissance party to plan for radar positions, OPs, and all-around security. Composition of the reconnaissance party is generally prescribed in unit TSOPs. During the reconnaissance, the party makes decisions regarding:

- Ability to accomplish the mission.
- All PAs, communications sites, and observation posts.
- All-around security.
- Routes of march (primary and alternates) and rest/refuel sites.
- Survey requirements.
- Position entrances and exits.
- Concealment/defilade.
- Trafficability.
- SPs and RPs.
- Use of route markers or traffic control points.
- Order of march/ displacement.
- Enemy and friendly situations.

- Bridge capacity.
- Time of movement/travel times.

6-36. Concurrently, the staff (primarily the S3) coordinates with the maneuver HQ, normally through the brigade or regimental FSO, to:

- Verify the battalion can support the mission from its planned positions.
- Resolve any conflicts in positioning or movement between the FA battalion and the maneuver elements.
- Ensure all elements know the current and planned PAs.

6-37. Determine how specific maneuver operations, such as the obstacle and deception plans, affect the reconnaissance, its intended routes, and the subsequent tactical movement of the unit.

## RECONNAISSANCE TECHNIQUES

6-38. The battalion commander and staff can use one or a combination of the three reconnaissance methods - map, ground, and air. The best reconnaissance is a combination of all three. Normally only a map reconnaissance is possible, frequently followed by a ground reconnaissance.

### Map Reconnaissance

6-39. Any reconnaissance begins with a map reconnaissance, especially when time is short or when the enemy occupies the projected position. A map reconnaissance can identify potentially unsuitable routes, ambush sites, natural obstacles, and chokepoints. Some things to consider include:

- Actual terrain conditions cannot be determined.
- Roads, towns, and terrain features may have changed.
- Other units may be in the position.
- Military load classifications of bridges aren't listed on maps. Bridges must be physically inspected. The engineers may have a classification listing available; however, ensure it is not outdated.
- Enemy forces may be in the area.

### Ground Reconnaissance

6-40. This is the best method of reconnaissance and is used whenever possible. Security may be an issue as most reconnaissance parties are small. When the ground threat is high, reconnaissance parties also must take actions to prevent fratricide with friendly elements in or near the area to be reconnoitered. Ground reconnaissance is the most time consuming technique.

### Air Reconnaissance

6-41. Use air reconnaissance to support map and ground reconnaissance whenever possible, especially when time is short, air assets are available, and air superiority exists in the area to be reconnoitered. Considerations include:

- The physical condition of the ground is difficult to determine.
- The route to be used cannot be adequately reconnoitered.
- Key staff elements cannot accompany the commander.
- The reconnaissance could give away future plans and intentions.

## **SECTION III – MOVEMENT**

6-42. This section addresses movement techniques and considerations common to most battalions. It also provides information on planning and controlling movement. Additional information can be found in FM 6-50, FM 6-60, and FM 6-70.

### **MOVEMENT TECHNIQUES**

6-43. FA battalions may conduct several types of movement, individually or as part of a larger movement by a combined arms force or a FA brigade. DS and R FA battalions may participate in approach marches and combat formations, which are primarily maneuver or combined arms moves.

- Administrative movement.
- Tactical road march (close, open, infiltration and combined arms).
- Airborne or airmobile movement.
- Combined arms movements.
  - Approach march.
  - Combat formations.
- Tactical displacements.

### **ADMINISTRATIVE MOVEMENT**

6-44. Units conduct administrative movement when contact with the enemy (ground or air) is unlikely. Movement emphasizes efficient use of organic and supporting transportation assets. The S4 plans administrative movements.

### **TACTICAL ROAD MARCH TECHNIQUES**

6-45. The tactical road march is a unit move in a combat-ready posture normally conducted in the combat zone. Enemy contact is possible during the march or soon after arrival at the unit's destination. Units frequently move by tactical road marches to assembly areas to prepare for combat operations. Three techniques can be used during tactical road marches:

- Close column.
- Open column.
- Infiltration.

#### **Close Column**

6-46. In a close column, vehicles are spaced about 20 to 25 meters apart during daylight (maximum 50 meters). At night, vehicles are spaced so that each driver can see the two lights in the blackout marker of the vehicle ahead. Close column is normally used for marches under blackout driving conditions, in restricted terrain, when maximum C2 is required, or when necessary to quickly clear a bridge, intersection, or key route for other traffic. It is also useful during periods of limited visibility, or when moving through built-up or congested areas.

6-47. The advantages of the close column march technique include:

- Simplicity of command and control.

- Maximizes the traffic capacity of a route.
- Reduces march column length.
- Concentrates defensive firepower.

6-48. Disadvantages of the close column march technique include:

- Provides little dispersion.
- Increases vulnerability to enemy observation. Strength and nature of the column is more apparent to enemy observers.
- Increases vulnerability to attack, especially air attack.
- Increases risk of accidents, especially during night, periods of limited visibility or poor weather/road conditions, and during long moves.
- Reduces convoy speed and increases driver fatigue.

### Open Column

6-49. In an open column, the commander increases the distance between vehicles to provide greater dispersion. The distance between vehicles varies from 50 to 100 meters, and may be greater if required. The open column technique is normally used during daylight and when traversing icy, slick, or steep roads where the accident risk is high. Units may also use it at night with infrared light, blackout lights, or passive night-vision equipment. This is the most common movement technique because it offers the most security while still providing the commander with a reasonable degree of control.

6-50. The advantages of the open column march technique include:

- Speed (the fastest march technique).
- Increases dispersion decreases vulnerability to effective enemy observation and attack, especially air attack.
- Lessens chance of an entire march column being ambushed.
- Eases passing of individual vehicles encountered during the move.
- Improves vision on dusty roads and reduces risk of accidents.

6-51. The disadvantages of the open column march technique include:

- Increases column length, requiring more road space, and increases passing times. This can complicate movement planning.
- Decreases C2 as communication within the column is more difficult.
- Decreases the ability of the column to quickly mass defensive fires against an ambush.
- Increases risk of column breakup if a vehicle breaks down or loses contact with the vehicle to its front.
- Increases risk of other traffic becoming interspersed in the column.

### Infiltration

6-52. During a move by infiltration, vehicles are dispatched individually, in small groups, or at irregular intervals at a rate that keeps the traffic density down and prevents undue massing of vehicles. Infiltration is suited for tactical road marches when there is enough time and road space and when the commander desires the maximum security, dispersion, and deception.

6-53. The advantages of the infiltration march technique include:

- Provides least vulnerability to hostile observation.
- Provides passive defense against air and artillery attack.
- Deceives the enemy as to the size of the unit.
- Ideal for covert operations.

6-54. The disadvantages of the infiltration march technique include:

- Requires more time to complete a move.
- Is the most difficult to command and control.
- Smaller elements are more vulnerable to enemy ground attack.
- Individual vehicles or smaller groups may get lost.
- Complicates and protracts recovery of disabled vehicles.
- Unit integrity is not restored until the last vehicles closes. This can complicate the onward forward movement or deployment of the unit.

### Combined Arms Road Marches

6-55. When the FA battalion moves as part of a combined arms force the battalion may move as a single serial within the overall force (see Figure 6-3). The position of the FA serial within the combined arms march is determined by the situation. The battalion may also move dispersed by battery within the movement. This technique may allow the battalion to place one battery more forward in the march column and to better disperse FA assets to provide mutual support, to support the force, and to increase survivability. When moving as part of the larger force, the FA battalion will need to coordinate reconnaissance and quartering party activities with the maneuver force.

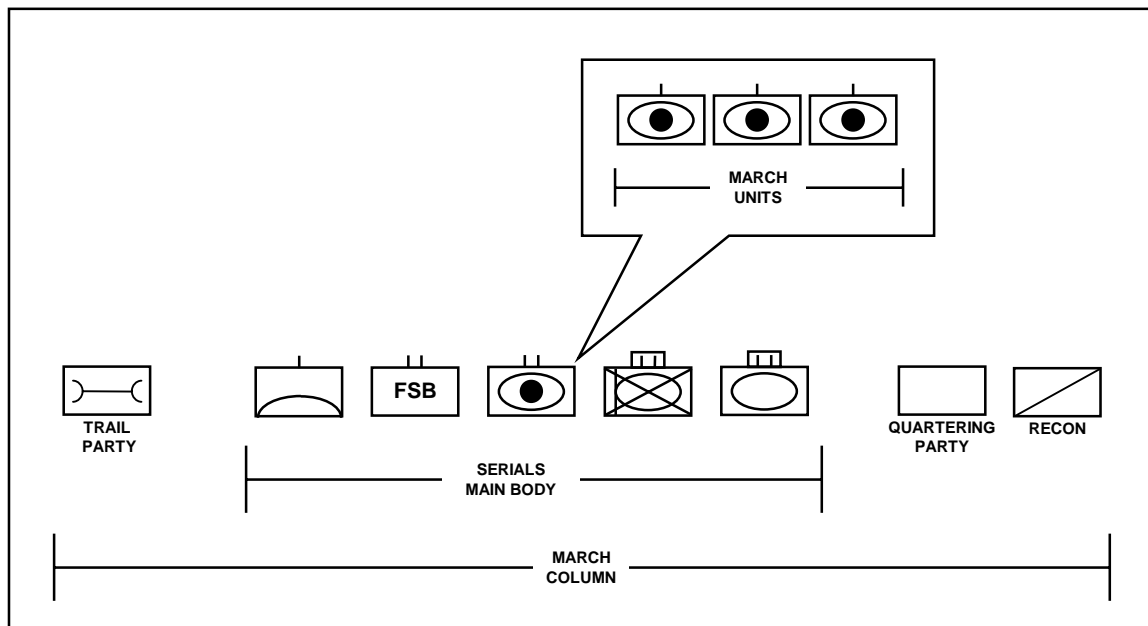


Figure 6-3. Example of a FA Battalion in a Combined Arms Tactical Road March

## AIRBORNE/AIRMOBILE MOVEMENT

6-56. FA towed cannon battalions may be moved/inserted by way of airborne or airmobile operations. Airborne movements are usually conducted as part of a combined arms force operation. Airmobile moves are also frequently conducted as part of a combined force operation but may also be an FA only move. FA only airmobile operations may be used when ground movement isn't possible due to impassable terrain or enemy forces, to conduct an artillery raid, or to quickly shift firepower or reinforce an operation.

6-57. As air transportation assets are limited, airborne and airmobile movement frequently involves only the critical elements of the battalion, possibly only one or two firing batteries and a HQ/CSS slice. The remainder of the battalion may follow later. Reconnaissance is frequently difficult, and is an OPSEC issue as it can give away locations and plans. Additional information on airborne and airmobile operations is in Chapter 8.

## COMBINED ARMS MOVEMENTS

6-58. FA battalions, especially DS battalions, may occasionally make their movement as part of a maneuver ground operation. Two types of combined arms ground movements are the approach march and combat formations.

### Approach March

6-59. An approach march is a tactical movement that emphasizes speed over tactical deployment (see Figure 6-4). It is used when the enemy's location is known, which allows the force to move with greater speed and less physical security or dispersion. The approach march terminates in a march objective, such as an attack position, assembly area, or assault position, or can be used to transition to an attack.

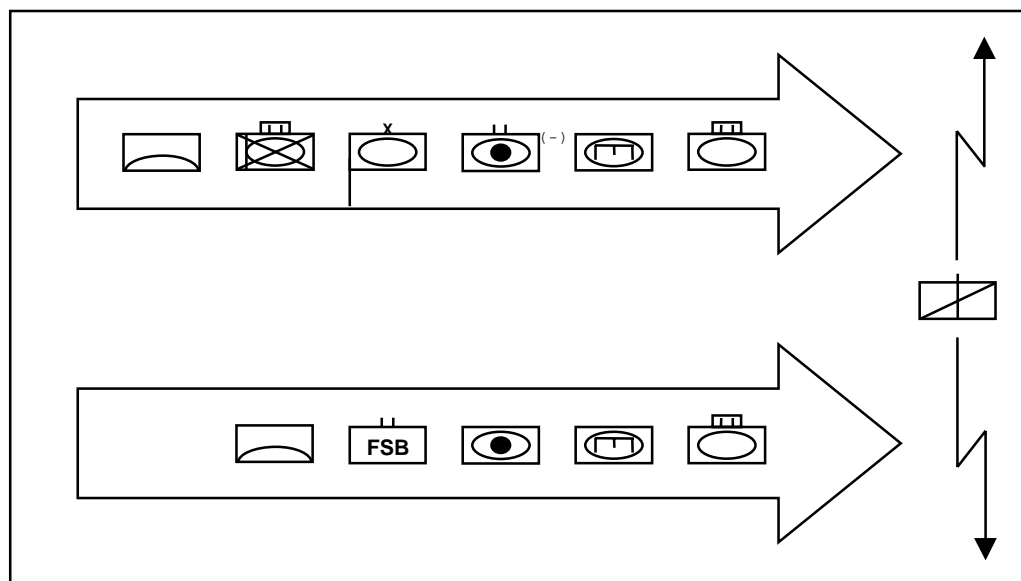


Figure 6-4. Example of a FA Battalion in a Combined Arms Approach March

6-60. There are several key differences between an approach march and a tactical road march. An approach march employs a larger security force. Units conducting an approach march are task organized before the march begins to allow them to transition to the mission without making major adjustments in the organization. Units conducting an approach march establish appropriate intervals between vehicles and normally do not employ a close column. In addition, more routes are used during an approach march.

6-61. As the approach march nears areas of likely enemy contact, the maneuver commander divides his main force into smaller, less vulnerable columns that move on multiple routes or cross-country while continuing to employ security elements.

6-62. A FA battalion that is part of an approach march will normally disperse among march columns based on how it expects to deploy during or at the end of the march. The ability to provide fires for the force is also a major consideration. If cross-country movement is expected, vehicles with limited mobility may need to travel in whichever column will use the more trafficable routes. These elements would link back up with their units as FA positions stabilize and better routes become available.

6-63. As the approach march disperses into smaller columns, security becomes an issue for FA units. At some point firing batteries and CPs may need to separate from the march column to establish firing capability to support the force. RPs should be used to identify where and when FA units are no longer part of the approach march. Generally, at least one battery will need to be in position at whatever point the maneuver commander desires support for the screening force in anticipation of enemy contact.

6-64. The requirement to provide fires may occur earlier than anticipated, before FA units have departed the march column to assume firing positions. The FA battalion should have a plan (battle drill) for this situation and should include this in the rehearsal plan. The plan may consist of one firing battery and the battalion jump TOC pulling out of the march column and assuming operations with further actions determined based on how the situation develops. The availability of reinforcing FA or fires from force FA units must also be considered during an approach march.

6-65. A DS FA battalion may also have to plan and coordinate march locations for a reinforcing battalion, and radars,. The later may be required in screening/security forces forward or to the flanks. Several EFSTs and EFATs will probably be planned in support of the approach march and many will involve linkages between COLTs/Strikers (or other security force elements) and the firing elements that will provide the fires.

### **Combat Formations**

6-66. A FA battalion, especially one with a DS or R mission, may move as part of the supported maneuver force's combat formation. Combat formations are used for movement when the unit anticipates combat. Maneuver brigades use six basic combat formations:

- Column.
- Line.



- Echelon.
- Box.
- Wedge.
- Vee.

6-67. These formations and the guidelines for their use are described in more detail in FM 7-30, *The Infantry Brigade*, and FM 71-3. A diagram of a FA battalion moving in an infantry brigade echelon formation (Figure 6-5) is provided as an example of a combat formation.

6-68. The deployment of FA elements within a combat formation will be dependent on the situation and the maneuver commander's concept for fires. As with the approach march, the timing and execution of FA elements departing the formation to assume firing positions is a critical activity that requires detailed planning and rehearsal.

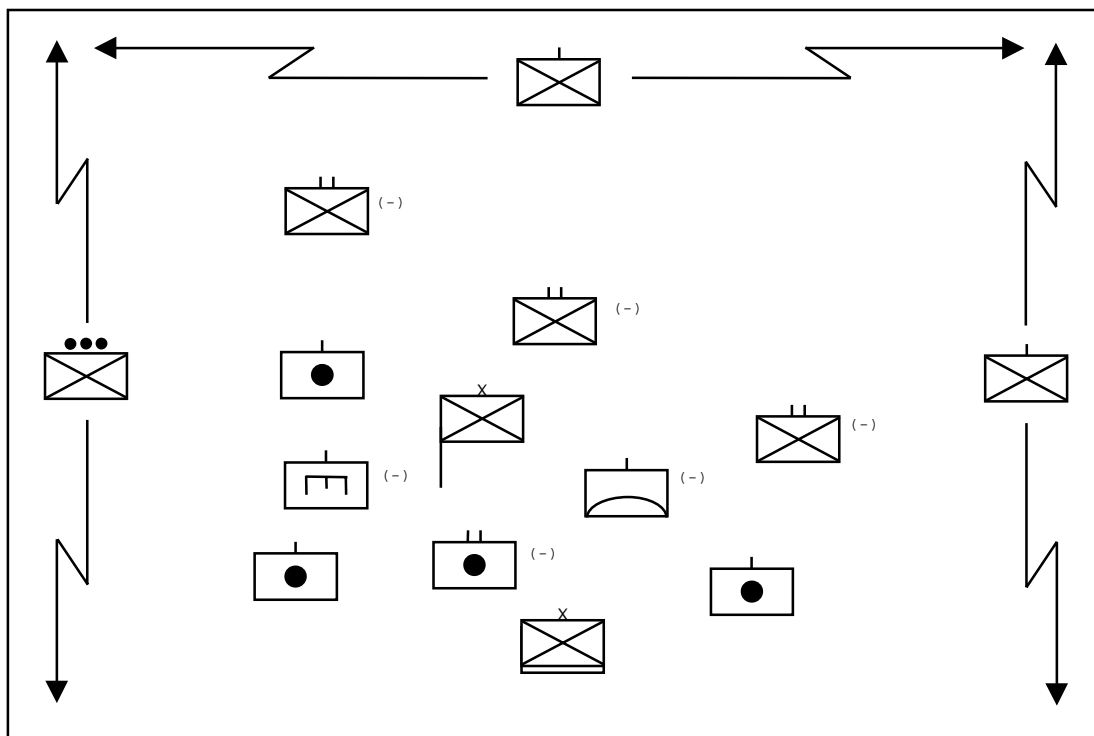


Figure 6-5. Example Combat Formation (Brigade in Echelon Formation)

## MOVEMENT CONSIDERATIONS

6-69. Consideration for planning movements include:

- Current mission and future operations.
- Tactical situation (to include other movements).
- Communications (to include automation).
- Force mix and weapon capabilities.
- Survivability/security/threat.
- Time/distance.

- Routes.
  - Road/route capacities and conditions.
  - Bridge capacities.
  - Critical points, intersections/forks, and checkpoints.
  - Location of friendly/enemy/natural obstacles.
- Weather and terrain.

## DISPLACEMENT TECHNIQUES

6-70. Whereas *movement* primarily concerns the method of transportation and the actual travel techniques used, *displacement* addresses the broader organization and sequencing of a unit move. The battalion can displace by unit, echelon, battery or element (that is, by platoon, section or vehicle).

### DISPLACEMENT BY UNIT

6-71. In a displacement by unit, the battalion displaces with all elements moving at once. This method is best used when the battalion is supporting a unit not in contact or when augmenting fires are available.

6-72. The advantages of this method are as follows:

- This type of displacement is most easily controlled.
- It is the fastest method.
- Long moves are made more easily.

6-73. The disadvantages of this method are as follows:

- The battalion presents a big target.
- While moving, the battalion is not providing any immediate FS.
- The traffic will further congest already crowded roads.
- The commander has little flexibility once the movement has started.

### DISPLACEMENT BY ECHELON

6-74. In displacement by echelon, the battalion usually moves in 2-3 groupings organized for the situation rather than by specific unit. As an example, the battalion may displace one or two firing batteries, a portion of the C2 element and some service elements in one echelon. The rest of the battalion stays in position to support the ongoing operation until the first echelon is in place. The remainder of the battalion moves as a second echelon.

6-75. The advantages of this method are as follows:

- The maneuver operation receives continued FA FS.
- The mutual support unit control of the remaining elements is simpler.
- Command and control are facilitated.
- The size of moving convoys is smaller than in a displacement by unit.

6-76. The disadvantages of this method are as follows:

- Each of the moving elements is relatively large.
- Support to the operation is degraded by as much as two-thirds, depending on the technique used.
- The commander's flexibility is limited.

## DISPLACEMENT BY BATTERY

6-77. In a displacement by battery, each battery of the battalion moves only after the preceding battery has completed its move and is in place. The CP and trains move by a separate schedule. This method is used primarily to support a unit in contact.

6-78. The advantages of this method are as follows:

- Support to the maneuver operation is continuous.
- By use of the mutual support unit, C2 of fires are continuous.
- Command and control of the movement are centralized.

6-79. The disadvantages of this method are as follows:

- FA support to the operation is degraded by one-third throughout the movement of the battalion.
- The movement is slow.
- The movement of individual units presents a significant target.
- The commander's flexibility is not maximized.

## DISPLACEMENT BY ELEMENT

6-80. In a displacement by element, the battalion displaces by individual elements as recommended by the battery commanders. Their recommendations are based on knowledge of the level of training of the battery.

6-81. The advantages of this method are as follows:

- Flexibility of the commander is increased.
- Maximum continued support to the maneuver operation is ensured.
- The signature of the moving unit is very small.
- The higher the level of training of the unit, the more effective this technique becomes.
- Command and control of the movement are decentralized. The C2 elements are released to concentrate on the conduct of the battle.
- Flexibility in selection of movement routes is unlimited.

6-82. The disadvantages of this method are as follows:

- Considerable time is required to complete the move.
- Control by the mutual support unit is not facilitated.
- Command and control problems are increased.
- The smaller elements are more at risk to ambush and attack by enemy elements or sympathizers.
- Information flow must be rapid and accurate.

## MOVEMENT CONTROL MEASURES

6-83. Units use graphic and procedural control measures to control movement and positioning of forces. Common graphic control measures include objectives, phase lines, checkpoints, and boundaries. Procedural controls, such as periodic reports by subordinates, also assist with controlling movement. All subordinates should report crossing or occupation of key

graphic control measures and checkpoints, initiation of movement, and closure at designations. Units should immediately report problems that impact the movement plan. TSOPs will provide much movement guidance with movement plans addressing changes or additions as necessary. Refer to FM 101-5-1 for additional information on maneuver control measures.

#### **START POINT**

6-84. Each movement has an easily recognized SP. It should be far enough from assembly areas that units are organized and moving at the detailed rate by the time it is reached. Each unit should have a separate route to the SP. Each unit is responsible for reconnoitering its route to the SP and determining times of arrival and clearance of the SP. If the unit is displacing as part of a larger unit, the SP is also the point at which control of movement is normally assumed by the larger unit.

#### **RELEASE POINT**

6-85. The RP gives the march column a common point for reverting to own or parent unit control. It should be on the route and recognizable on both the ground and the map. It is important that units disperse quickly from the RP. Again, separate routes should be used from the RP to the new PA for each unit as much as possible.

#### **CRITICAL POINTS**

6-86. Critical points are points used for reference in giving instructions, places where interference with movement may occur, or places where timing may be critical. Movement should generally continue uninterrupted through these critical points unless one is designated as a planned stop (possibly to refuel, rearm, rest, or allow passing of a higher priority unit). Critical points may include key intersections or points along the route where direction of movement changes. Guides or signs may have to be used.

#### **CHECKPOINTS**

6-87. Checkpoints are features identifiable on the ground and on the map. They are used in reporting progress along the route. Checkpoints may be used as target reference points when planning defensive fires for the convoy.

#### **RALLY POINTS**

6-88. Normally a rally point is a geographical feature identifiable on the ground and on a map. It is used as a point of assembly and recovery from dispersion due to enemy attack. Some designated rally point(s) should be located near or on the alternate route to the new position.

#### **RESTRICTIONS**

6-89. These are points along the route, such as bridges or intersections, where movement may be limited or obstructed for specified periods of time. The planner must consider these restrictions and try to organize the move so minimal interference occurs at these points.

## COMMUNICATIONS

6-90. Because OPSEC considerations may restrict use of radios during tactical movement, communications frequently relies heavily on personal contact, visual signals, code words, and signs, markers, or control measures. Use of radios may be restricted to emergencies. Progress at checkpoints may be reported by personnel manning the checkpoint, through use of a wire or digital communications network. TSOPs and rehearsals are especially important to the execution of tactical road marches during radio silence.

## TRAFFIC CONTROL

6-91. Traffic control is the responsibility of the controlling HQ. The MPs are usually employed at critical points along the route to give directions and minimize delays. Road guides, posted by the quartering party, can help the MPs control traffic and resolve conflicts.

## ROUTE MARKING

6-92. Route marking aids in movement control. The advance party or a route marking detail should post signs, and/or personnel at those critical points where elements of the march might make a wrong turn. Details concerning traffic control and route markings are in FM 55-30, *Army Motor Transport Units and Operations*, and FM 19-25, *Military Police Traffic Operations*.

## SPEED CONTROL

6-93. It is critical that the head of the column not exceed the authorized speed of the slowest vehicle in the column in order to reduce column whipping. All personnel involved must maintain the correct interval, both between vehicles and between march units.

## PREDETERMINED SIGNALS

6-94. Use established signals (in TSOP) to aid in convoy control (e.g., colored flags in daylight, and flashlights at night). See FM 21-60, *Visual Signals*.

## HALTS

6-95. Halts may be made for rest, personal comfort, messing, refueling, maintenance, checking of equipment, allowing other traffic to pass, and for getting back on schedule. The time and length of halts are detailed in the movement order or in unit TSOPs. Activities performed during halts should be planned and conducted as drills and may be outlined in TSOPs or battle books. As much as possible, all halts should be planned based on time, distance, and speed estimates in order to determine where all halts may occur, whether potential locations are appropriate, and if special arraignments or changes to the movement plan are necessary. There are generally two types of halts

- A **short halt** is usually taken for 15 minutes after the first hour and for 10 minutes every two hours thereafter. All march elements should stop at the same time. The availability of sites, rather than time, may determine when short halts actually occur. For tactical road marches of 3 hours or less, the commander may elect not to use short halts.

- A **long halt** is a stop for an extended period, generally 30-60 minutes or more. Additional time must be added to the total travel time for a long halt. Locations for long halts generally require more extensive planning as security, dispersion, camouflage, and other requirements are more complicated. Also, long halts often include activities such as refueling, maintenance, section drills or training, team briefings, or other actions.

6-96. Dispersion and camouflage during halts are critical to survival. Wooded areas, built-up areas, and terrain features should be used as much as possible to conceal the column during halts. When possible, vehicles should disperse along opposite sides of the road to prevent a straight-line target for attack by enemy air. Columns generally should not stop near crossroads, railroads, and other easily identifiable reference points.

## MOVEMENT PLANNING

6-97. Movement planning is part of the MDMP process. Movement times, sequences, and techniques should be evaluated, wargamed, and rehearsed as necessary to ensure that movement plans will support the operation. Much of the direction for movement should be addressed in unit TSOPs and battle books. METT-TC and situation specific factors will determine much of the movement plan. Movement planning consists of three major steps:

- Determine requirements for the moves.
- Analyze movement considerations, capabilities, and techniques.
- Establish movement priorities and control measures.

6-98. METT-TC usually dictates requirements for moves. During an operation, movements usually consist of short, tactical displacements or marches. However, when the battle tempo dramatically fluctuates, or when a FA battalion changes mission, longer moves are often required.

6-99. A FA battalion may plan and conduct its moves as part of a larger force. The following techniques, considerations, and control measures will assist the FA battalion in the planning and conduct of battalion level unit movement. FM 55-30 and the following references also contain useful information.

- By rail – FM 55-15, *Transportation Reference Data*.
- By air – FM 55-9, *Unit Air Movement Planning*, and FM 90-4, *Air Assault Operations*.
- By water – FM 55-15.

6-100. For movement as part of a combined force involving other nations or for movement conducted in allied nations, planners should also review.

- STANAG 2041 and QSTAG 520, *Operation Orders, Tables and Graphs for Road Movement* (see FM 55-30 for applicable details).
- STANAG 2154 and QSTAG 539, *Regulations for Military Motor Vehicle Movement by Road*.

## PLANNING FACTORS

### Distance

6-101. Distance factors include the following:

- **Vehicle distance** is the distance between two consecutive vehicles.
- **Column gap** is the space between two march elements. It is calculated in length or time units, measured from the rear of one element to the front of the next.
- **Traffic density** is the average number of vehicles in one mile or kilometer of road. It is expressed in as vehicles per mile or kilometer.
- **Column/serial/march unit length** is the length, including gaps, of the various march elements from front to rear.

### Rate (Speed)

6-102. Speed factors are as follows:

- **Speed** is the actual rate of a vehicle at a specific moment. It is expressed in miles or kilometers per hour.
- **Pace** is the speed of a column set by the head vehicle to maintain the average speed prescribed in the movement order.
- **Rate of march** (ROM) is the average distance traveled in a period of time. It includes short halts.

### Time

6-103. Time factors include the following:

- **Start time** is the time that the lead vehicle crosses the SP.
- **Arrival time** is defined as the time the lead arrives at a certain point.
- **Clearance time** is when the last vehicle passes a certain point.
- **Completion time** occurs when the last vehicle passes the RP.
- An **extra time allowance** (EXTAL) of 1 minute per 25 vehicles is normally allotted over and above the calculated pass time. If there are fewer than 25 vehicles in total, EXTAL is not added. If there are over 600 vehicles, 2 minutes per 25 vehicles is allotted.
- **Pass time** (PST) is the actual time between the lead vehicle of a column, serial, or march column passes a given point and when the last vehicle passes the same point.
- **Time distance** (TDIS) is the time needed to move a certain distance at a given rate of march.
- **Road clearance time** (RCT) is the total time a column needs clear a section of road. ( $RCT = TDIS + PST$ ).
- A **time gap** is the time aspect of the column gap.

## PLANNING FORMULAS

6-104. As the composition of each march column is different, the movement planner must determine time distance, pass time, arrival time, and completion time. The basic factors used in movement planning are distance, rate of march (speed), time, number of vehicles, and vehicle density.

6-105. When a FA battalion moves as part of a larger force, the S3 may be given the start and RPs, the anticipated rate of march, directions for open or closed column march, and guidance for short or long halts. He must then estimate his total march time – the time between when the first vehicle crosses the SP and when the last vehicle crosses the RP. Or the battalion may be given the start and RPs and a time allocation (normally designated by start time and RP clearance time). In this case the S3 must compute requirements for rates of march, vehicle density, column gaps, and halts. Since the battalion may move may be dispersed among several march columns, moving along multiple routes, the S3 and the battery commanders must work together to make the calculations.

- Assembly time is the time between when first elements depart their current positions and the start time (when the lead vehicle crosses SP).
- Total march time is the time between when the head vehicle of the march column crosses the SP and when the last vehicle crosses the RP.
- Occupation time is the time from when the last vehicle crosses RP and the time when all elements from the column have completed arrival in their new positions.
- Closure time may also be calculated to account for the recovery of vehicles that may drop out of the march column and cause the separation of the trail party from the main body of the march column. Closure time may be estimated as a specific hour or as a period of time after the RP clearance time. (i.e., Closure time is expected at 1700 hours or 3 hours after the last vehicle in the column crosses the RP.)

6-108. Total march time (TMT) is the sum of march TDIS plus PST plus long halts. These times are computed as follows (veh = vehicles, mph = miles per hour, kph = kilometers per hour):

$$\text{PST (minutes)} = \frac{\text{Number of veh} \times 60}{\text{Density} \times \text{speed}} + \frac{\text{Number of veh}}{25} + \text{Time Gaps (in minutes)}$$



6-109. Occupation time is estimated based on the distance the elements must travel from the RP and the positions they must occupy. It is the period between the official end of the road march (when the last vehicle crosses the RP) and the time the last element has occupied its position. When possible, occupation time can be reduced by placing the elements with the most distant positions in the front of the column.

6-110. A battalion hasn't completed its move and fully closed on its new position until all elements have arrived. During longer moves or adverse conditions, recovery operations may extend final closure several hours beyond the march column's completion time. The trail party will try to recover all vehicles quickly enough to maintain contact with the main body of the march column, however, this may not be possible. Generally the trail party will try to consolidate all recovery teams that fall behind, traveling at the speed of the slowest vehicle. The trail party may compete with other units for routes and travel times. It may be incorporated into other unit march columns or may not be able to use the route until it become clear. Closure time is only significant if the battalion anticipates extensive recovery operations where the bulk of the battalion's recovery assets and a sizable maintenance effort cause the trail party to become separated from the march column.

6-111. The RP is normally the terminal point of a road march. Arrival time is computed by adding TDIS and long halts to the start time. If the unit passes the SP at 1000 and its TDIS was 6 hours and there was one long halt of 1-hour duration, the planner adds these and derives an arrival time of 1700. Completion time is calculated by adding PST to arrival time, or by adding TDIS, PST, and halts to the SP time.

#### DISSEMINATION OF MOVEMENT PLAN

6-112. Units disseminate a movement plan through the use of a **movement order**, which is a type of OPORD. The order covers the friendly and enemy situations, destination, routes, rate of march, maximum speed, details of air and ground alert guard, halts, vehicle distance, time gap, SP, RP, critical point, service support, and command and control. Other data such as route markers may be included as necessary.

6-113. A **strip map** or sketch of the route is usually included as an annex to the movement order. All key personnel, to include each driver, should receive a strip map. It should show the start and RPs, restrictions, and critical points with the distance shown between each.

6-114. A **road movement table** is an annex to the movement order. It consists of two parts. One part, the data paragraphs, shows information pertaining to two or more march elements, a list of march units, and all other information arranged in tabular form. The other part breaks information into specific march units and could include number of vehicles, load class of the heaviest vehicle, points of departure and destination, route, route to SP, critical points, route to the destination from the RP, and a remarks section.

**SECTION IV – SURVEY**

6-115. Survey is used to establish accurate locations and directional control for weapons and TA assets. It establishes a common grid that permits the massing of fires, the delivery of surprise observed fires, the delivery of effective unobserved fires, and the transfer of target data from one unit to another. With the increased availability of GPS devices in vehicles and weapon systems, requirements for survey support are decreasing. However, understanding of standard survey principles is critical for successful operations during degraded operations. See FM 6-2, *Tactics, Techniques, And Procedures for Field Artillery Survey* for additional information.

6-116. Survey control is a command responsibility. Each force FA HQ is responsible for establishing a common grid throughout its area of operations. During MDMP development, the supported maneuver commander, S3, and FSCoord identify key survey issues. In advising the maneuver commander, the FSCoord analyzes the commander's guidance, the scheme of maneuver, rate of movement, effects desired on HPTs, and accuracy requirements for weapons and TA sensors. The FSCoord ensures that the FSP and FASP provide the necessary survey guidance and tasks. Details for survey support to mortars and non-FA TA assets may need to be addressed in both the FSP and FASP as the non-FA units may not receive the FASP.

6-117. A FA battalion may receive survey instructions and guidance directly from the FSCoord/FSE/FA commander during direct involvement in the combined arms force MDMP or through their higher FA HQ in a FASP. The FA battalion commander, S3, and survey section chief are the key individuals involved in reviewing the instructions and guidance, identifying the battalion's total survey requirements, and developing battalion survey plans.

6-118. The FA battalion commander's guidance must provide the following:

- Priorities for survey to include survey methods.
- Accuracies required if other than TSOP. Modified survey techniques may be needed as the result of METT-TC.
- Times that critical tasks in the survey plan must be completed.
- Position requirements (primary, alternate and supplementary).
- Future plans.

6-119. The FA battalion S3 must coordinate continuously with higher-echelon staff and commanders and advise the battalion commander on any deviation from previous guidance. If the tactical situation or the absence of accessible survey control points (SCPs) requires use of hasty survey or field-expedient methods of establishing SCPs (position and azimuth system [PADS] in conjunction with the GPS), the force FA commander must be informed.

6-120. The S3, advised by the survey section chief, develops the survey plan using all available assets and techniques to best meet the guidance given by the commander. The S3s of both reinforced and reinforcing battalions must coordinate their efforts and plans. Survey assets may have to be pooled on occasion without regard to unit identity to achieve the mission. GS/GSR units will closely coordinate their survey requirements with DS units when

operating in a DS unit's AO, especially during offensive operations. During defensive operations involving rearward movement, DS/R units may rely heavily on force FA and GS/GSR unit survey information to facilitate survey operations. The battalion survey plan must be coordinated with force FA HQ to ensure use of consolidated SCP data and to eliminate duplication of effort.

#### FA BN SURVEY SECTION

6-121. The survey section is responsible for providing survey control to all organic, assigned, and attached firing elements, TA assets, observers, or other elements (e.g., OH-58Ds, EW and intelligence units, and mortars). The section operates under the control of the operations section.

6-122. A battalion survey section usually consists of a section chief, an assistant and two surveyors, and the following equipment: a HMMWV, secure FM radio, HTU, a PADS, and a survey set.

6-123. The survey section chief is the primary advisor for survey operations within the battalion. He assists the S3 with survey planning and directs and supervises survey activities. Specific duties include:

- Coordinate and supervise battalion survey operations.
- Develop the survey plan with guidance from the S3.
- Coordinate directly with BCs concerning survey requirements.
- Perform general reconnaissance and observation as required by the S3.

6-124. (**NOTE:** The survey PADS team must also assist the S3 and S2 in acquiring combat information as they perform their normal mission. They are particularly useful in gathering information about the terrain.)

#### SURVEY PLANNING FACTORS

6-125. The FA commander and S3 must be aware of the basic capabilities and limitations of survey before they can issue effective guidance and/or orders to the survey section. They must be aware of the factors discussed below.

- Available survey assets and equipment.
- Total survey requirements.
  - Weapon locations – FA cannon/rocket/missile systems, and mortars.
  - TA locations – FA and non-FA radars, observers (FOs, COLTs/Strikers), MI equipment.
  - SCPs.
  - Force FA requirements.
  - Target area survey.
- Time and distance factors.
- Operational status of other positioning systems – those in weapon or TA systems and other vehicular and handheld systems.
- Weather and terrain.
- Availability and accuracy of existing SCPs.

#### SURVEY PLANNING TIMES

6-126. The following times are used in planning survey:

- PADS survey team:
  - Cross-country: 10 kph.
  - Unimproved road: 25 kph.
  - Improved road: 50 kph.
  - Maximum mission time: 7 hours (system shutdown and reinitialization require about 40 minutes). The system must be updated on an SCP after seven hours. This update takes approximately five minutes.
  - Maximum mission radial distance: 55 km (system will require update data).

## PLANNING GUIDE

6-127. The battalion commander and S3 can use the following guide to ensure that most of the issues relating to survey planning are covered. It is not exhaustive and may have to be modified to meet a particular situation.

- Select primary, alternate and supplementary PAs for all assets requiring survey.
- Set time requirements associated with providing survey (planning, reconnaissance, fieldwork, and completion).
- Determine accuracy requirements for weapons and TA systems (third, fourth, or fifth order survey). Standard requirements should be reduced only if time is a critical factor. An example might be providing only direction to FA units and requiring other units to establish their own locations by use of hasty techniques.
- Set a survey priority for each asset requiring survey. This may mean that survey will be controlled at the highest feasible level and not be done independently by individual battalions and units.
- Determine the availability of starting SCPs, PADS update points and closing points and the accuracy of each point. If they are not readily available, include the requirement to emplace them in survey priorities.
- Consider performing survey updates at SCPs during rearm, refuel, and resupply (R3P) operations (sometimes referred to as R3SP operations).
- Coordinate at all levels. The requirements from higher HQ must be determined so that they can be included in the planning process.

## DEGRADED SURVEY OPERATIONS

6-128. Degraded conditions for survey operations may occur due to unavailability of satellite systems or inoperable automated position/direction systems. During these times the FA battalion will rely more heavily on the use of PADS and on hasty survey techniques. During offensive operations, DS, R, and other forward FA battalions may require survey assistance from force FA HQ survey assets. During defensive operations, force FA survey teams can more easily assist DS and R units as they move rearward, however, this requires early identification and coordination of requirements.

6-129. Hasty survey techniques may be used during degraded operations or when adequate survey control is not available. See FM 6-2 for additional information on degraded and hasty survey techniques.

## SECTION V – DEPLOYMENT

### DEPLOYMENT READINESS

6-130. FA battalions must be capable of deploying anywhere in the world with little or no notice to provide fires for contingency forces. The following discussion is not intended to be all-inclusive but rather to highlight deployment planning considerations. Additional information can be found in:

- FM 25-5, *Training for Mobilization and War*.
- FM 55-9, *Unit Air Movement Planning*.
- FM 100-17, *Mobilization, Deployment, Redeployment, Demobilization*.
- FM 100-17-1, *Army Pre-Positioned Afloat Operations*.
- FM 100-17-2, *Army Pre-Positioned Land*.
- FM 100-17-3, *Reception, Staging, Onward Movement, and Integration*.
- TB 55-46-1, *Standard Characteristics (Dimensions, Weight, and Cube) for Transportability of Military Vehicles and Other Outsize/Overweight Equipment*.

FM 100-17-1 and FM 100-17-2 have “Commander’s Guides” as appendices.

6-131. The key to proper deployment readiness is development of a detailed deployment TSOP and necessary deployment plans. Unit leaders should thoroughly analyze their potential deployment missions, evaluate various scenarios and options, and identify Army, post, and supported unit requirements. Plans and TSOPs should address all aspects of deployment, from training and preparation, to alert, recall, predeployment, deployment, and in-theater embarkation activities, and rear detachment requirements.

### TRAINING

6-132. The battalion training plan should address training on all aspects of deployment. This includes everything from background briefings on the regional characteristics (weather, terrain, political/military, customs/laws, etc) and full, certification-type deployment exercises. Combined arms training strategies and mission training plans provide detailed training guidance.

### ADMINISTRATIVE AND LOGISTICAL READINESS

6-133. The unit should establish and update unit movement plans, rear detachment plans, recall plans, and alert rosters. Recall plans should be practiced often and revised as necessary.

### INTELLIGENCE/INFORMATION OPERATIONS

6-134. Early deploying units usually face a maze of complex information requirements--some relating to the enemy, others to local laws, availability of facilities, and similar considerations. Commanders and staff officers should quickly identify all sources of information and establish connectivity with appropriate agencies. Regional, deployment/staging, and CSS information should be obtained and incorporated into planning and training as early as possible, preferably during peacetime. This is critical in preventing information overload from interfering with core tactical mission planning.

## **FORCE TAILORING**

6-135. A deploying FA battalion may be task organized as a composite battalion, with both cannon and MLRS batteries. Commanders must identify this potential during deployment planning and training. Leaders should give special attention to logistical and ammunition requirements.

## **LOGISTICS**

6-136. Successful force projection requires flexible logistics and support systems. New supply channels will generally be established, and critical items, such as automated C2 parts and systems, may be in short supply initially. FA battalions should consider all classes of supply and logistical support when preparing to deploy as part of a force projection package.

## **JOINT OPERATIONS**

6-137. FA units may support any of a number of components during joint operations. The most likely situations include support of a MAGTF, SEAD support for fixed/rotary wing aviation operations, and force protection fires. Unit leaders should review joint terminology and all applicable references identify C2 requirements (communications and automation). The S3 should carefully research requirements for control measures and clearance of fires procedures as unusual situations often require unusual FS arrangements.

## **COMBINED OPERATIONS**

6-138. Contingency operations frequently involve operations with other nations. Commanders should ensure that all soldiers are aware of and sensitive to cultural differences that may impact their operations. Units should identify requirements for interpreters, digital C2, and liaison.

## **HOST NATION SUPPORT**

6-139. The FA battalion must quickly determine the amount of host nation support it can expect and the conditions under which the staff will be interoperating with local government, municipal, or business leaders.

## **DEPLOYMENT**

6-140. Usually, higher HQ develop deployment timeline based on METT-TC and reverse planning. These factors include but are not limited to: aircraft availability; type, size, and amount of equipment, and personnel and equipment attached. Movement officers must understand all aspects of deployment, and meticulously track automated unit equipment lists.

## **DEPLOYMENT PACKAGES**

6-141. Since contingency forces are tailored to meet the specific mission requirements it is possible that only parts of a FA battalion will deploy as part of a force projection package. These packages assume that a battalion C2 slice will accompany each package. This facilitates support and rapid integration of the battalion's follow-on elements. Deployment packages will vary widely depending on the situation and the type of FA unit involved.